

## **CLAIMS**

### **What Is Claimed Is:**

1. For use in an implantable medical device, a biocompatible, biostable, corrosion-resistant wire strand comprising:  
a core comprising a plurality of electrically conductive, low electrical resistance filaments embedded in an electrically conductive matrix; and  
a low electrical resistance, substantially chemically inactive cladding.
2. The wire strand of claim 1 in which:  
the core is substantially devoid of interstices.
3. The wire strand of claim 2 in which:  
the core comprises a drawn filled tube (DFT).
4. The wire strand of claim 2 in which:  
the core comprises a drawn brazed strand (DBS).
5. The wire strand of claim 1 in which:  
the plurality of filaments comprise a material selected from the group consisting of silver, gold and a low electrical resistance conductive polymer.
6. The wire strand of claim 1 in which:  
the matrix comprises a material selected from the group consisting of MP35N, tantalum, titanium and niobium.

7. The wire strand of claim 1 in which:  
the plurality of filaments comprise silver; and  
the matrix comprises MP35N.
8. The wire strand of claim 7 in which:  
the core comprises a 1xN strand, where N = at least 2.
9. The wire strand of claim 8 in which:  
N = 19.
10. The wire strand of claim 7 in which:  
the plurality of filaments comprise 10-35% by weight of the  
core.
11. The wire strand of claim 1 in which:  
the cladding comprises a material selected from the group  
consisting of platinum, iridium, rhodium, palladium and alloys thereof,  
including a platinum/iridium alloy.
12. The wire strand of claim 1 in which:  
the filaments are braided.
13. An implantable cardiac lead for transmitting electrical signals  
between an implantable medical device and selected body tissue in the  
heart, the lead comprising:  
a lead body having a proximal end and a distal end, the  
proximal end of the lead body carrying a connector assembly connectable  
to the implantable medical device; and  
at least one electrode on the distal end of the lead body, the  
at least one electrode being electrically connected to a terminal contact on  
the connector assembly, the at least one electrode comprising a  
biocompatible, biostable, corrosion-resistant wire strand comprising (a) a

core comprising a plurality of electrically conductive, low electrical resistance filaments embedded in an electrically conductive matrix and (b) a low electrical resistance, substantially chemically inactive cladding enclosing the core.

14. The lead of claim 13 in which:

the at least one electrode comprises at least one cardioverting and/or defibrillating electrode.

15. The lead of claim 13 in which:

the at least one electrode comprises at least one pacing and/or sensing electrode.

16. The lead of claim 13 in which:

the wire strand is in the form of a coil.

17. The lead of claim 13 in which:

the core of the wire strand is substantially devoid of interstices.

18. A wire strand comprising:

a cladding layer comprising a material selected from the group consisting of platinum, a platinum/iridium alloy, iridium, rhodium and palladium; and

a drawn filled tube core comprising a plurality of filaments embedded in a matrix, each of the plurality of filaments comprising a material selected from the group consisting of silver, gold and a low electrical resistance conductive polymer, and the matrix comprising a material selected from the group consisting of MP35N, tantalum, titanium and niobium.